CONTENTS

PART I

SSI-8 Organizing Committee vii

Preface viii

SENSORS FOR HEAVY INDUSTRY

C.B. Alcock, Solid state sensors and process control ☆ 3

B.Y. Liaw, J. Liu, A. Menne and W. Weppner, Kinetic principles for new types of solid state ionic gas sensors ☆ 18

K. Huang, W. Wu and Q. Liu, A new electrochemical sensor for rapid determination of silicon content in carbon saturated iron 24

N. Rao, C.M. van den Bleek, J. Schoonman and O.T. Sørensen, A novel temperature-gradient Na^+-β″-alumina solid electrolyte based SO_x gas sensor without gaseous reference electrode 30

C.B. Alcock, B. Li, J.W. Fergus and L. Wang, New electrochemical sensors for oxygen determination 39

MICROIONIC SENSORS

M. Madou, T. Otagawa, M.J. Tierney, J. Joseph and S. Oh, Multilayer ionic devices fabricated by thin- and thick-film technologies ☆ 47

C.K. Kuo, A. Tan and P.S. Nicholson, NH_4–β″-Al_2O_3 ceramics as hydrogen sensors 58

M. Nagai and T. Nishino, Fabrication and evaluation of porous Al_2O_3–AgI composites 63

F.M. Sutherland, T.H. Etsell and C.D. Eastman, High temperature measurements on solid and gaseous sulphide systems 68

M. Benammar and W.C. Maskell, Measurement of oxygen partial pressure using a miniature oxygen pump-gauge operated in the potentiometric mode 75

W.F. Chu, D. Fischer, H. Erdmann, M. Ilgenstein, H. Köppen and V. Leonhard, Thin and thick film electrochemical CO_2 sensors 80

A.S. Ioannou and W.C. Maskell, Characterisation of amperometric zirconia oxygen sensors prepared using planar thick film technology 85

S. Oh, J. Joseph, T. Otagawa and M. Madou, Multilayer ionic devices fabricated by the plasma-spray method 90

CERAMIC ELECTROCHEMICAL REACTIONS

C.G. Vayenas, S. Bebelis, I.V. Yentekakis and S. Neophytides, Non-Faradaic electrochemical modification of catalytic activity: the work function of metal electrodes in solid electrolyte cells 97

T.J. Mazanec, T.L. Cable and J.G. Frye, Jr., Electrocatalytic cells for chemical reaction ☆ 111

R.C. Copcutt and W.C. Maskell, CO/CO_2 electrochemistry on zirconia electrolyte with platinum electrodes in relation to amperometric oxygen sensors 119

☆ Plenary/keynote lecture.

J. Mizusaki, H. Tagawa, Y. Miyaki, S. Yamauchi, K. Fueki, I. Koshiro and K. Hirano, Kinetics of the electrode reaction at the $CO–CO_2$, porous Pt/stabilized zirconia interface 126

P.H. Chiang, D. Eng, H. Alqahtany and M. Stoukides, Nonoxidative methane coupling with the aid of solid electrolytes 135

M.N. Mahmood and N. Bonanos, Application of the mixed potential model to the oxidation of methane on silver and nickel–zirconia catalysts 142

J.H. White, E.A. Needham, R.L. Cook and A.F. Sammells, The electrochemical oxidative dimerization of methane 149

MEDICAL BIOLOGICAL MEMBRANES

R.O. Potts, R.H. Guy and M.L. Francoeur, Routes of ionic permeability through mammalian skin ☆ 165

J. Benavente and A. Heredia, Electric asymmetry of tomato cuticular membranes from permselectivity and resistance values 170

E.R. Scott, H.S. White and J.B. Phipps, Direct imaging of ionic pathways in stratum corneum using scanning electrochemical microscopy 176

D. Foley, J. Corish and O.I. Corrigan, Iontophoretic delivery of drugs through membranes including human stratum corneum 184

C. Cullander and R.H. Guy, Visualization of iontophoretic pathways with confocal microscopy and the vibrating probe electrode 197

IONIC MOBILITY AND CORROSION

J. Xue and R. Dieckmann, Zirconia – a non-inert material reacting with platinum and oxygen containing gases ☆ 209

R.B. Beeken, S.M. Wang and D.R. Smith, Electrical properties of Ag_5Te_2Cl and Ag_3TeBr 220

Y. Lu and E.A. Secco, Fast ion conductivity and phase transitions in $AgRbSO_4$ and $AgTlSO_4$ 223

R. Prescott, D.F. Mitchell, G.I. Sproule and M.J. Graham, Transport in α-Al_2O_3 scales on Fe–Al and Ni–Al alloys at 1100°C 229

D.S. Cox, R.F. O'Connor and W.W. Smeltzer, Measurement of oxidation/reduction kinetics to 2100°C using non-contact solid-state electrolytes 238

U. König and J.W. Schultze, The examination of the influence of a space–charge layer on the formation kinetics of thin passive films by Schottky–Mott analysis 255

T. Narushima, Y. Iguchi, T. Goto, T. Hirai and Y. Yokoyama, High-temperature active oxidation of CVD–Si_3N_4 in Ar–O_2 atmosphere 265

G. Petot-Ervas, C. Petot, D. Monceau and M. Loudjani, Cation redistribution in oxides under oxygen potential gradients: Influence on the corrosion kinetics 270

S. Becker, A. Rahmel and M. Schütze, Oxidation of $TiSi_2$ and $MoSi_2$ 280

F.-H. Lu and R. Dieckmann, Point defects and cation tracer diffusion in $(Co, Fe, Mn)_{3-\delta}O_4$ spinels: I. Mixed spinels $(Co_xFe_{2y}Mn_y)_{3-\delta}O_4$ 290

MIXED CONDUCTORS

J.-D. Guo, K.P. Reis and M.S. Whittingham, Open structure tungstates: Synthesis, reactivity and ionic mobility ☆ 305

C. Genin, A. Driouiche, B. Gérand and M. Figlarz, Hydrogen bronzes of new oxides of the WO_3–MoO_3 system with hexagonal, pyrochlore and ReO_3-type structures 315

N. Kumagai, Y. Matsuura, Y. Umetzu and K. Tanno, Preparation and characterization of tungstic acid C phases containing various cations 324

A.A. van Zomeren, J.-H. Koegler, J. Schoonman and P.J. v.d. Put, Charge transport phenomena in thin-film cathodes 333

K. Takada and S. Kondo, Electrochemical actuator with silver vanadium bronzes 339

J.C. Badot, L. Binet, N. Baffier, R. Morineau and A. Fourrier-Lamer, Electrical transport properties in vanadium bronzes obtained by the sol–gel process 343

P.G. Bruce, F. Krok, P. Lightfoot, J.L. Nowinski and V.C. Gibson, Multivalent cation intercalation 351

K. West, B. Zachau-Christiansen, S. Skaarup and T. Jacobsen, Lithium intercalation into mixed vanadium–molybdenum oxides 356

B. Zachau-Christiansen, K. West, T. Jacobsen and S. Skaarup, Lithium insertion in isomorphous MO_2(B) structures 364

C. Delmas and I. Saadoune, Electrochemical and physical properties of the $Li_xNi_{1-y}Co_yO_2$ phases 370

G.-A. Nazri and C. Julien, Far-infrared and Raman studies of orthorhombic MoO_3 single crystal 376

E. Cazzanelli, G. Mariotto, M. Catti and C.M. Mari, Photo-induced transformations in pyrochlore and trirutile phases of $HTaWO_6$ 383

O. Tillement, J. Angenault, J.C. Couturier and M. Quarton, Electrochemical studies of mixed valence NASICON 391

C. Julien, O. Mohammad Hussain, L. El-Farh and M. Balkanski, Electrochemical studies of lithium insertion in MoO_3 films 400

I.J. Pickering, J.T. Lewandowski, A.J. Jacobson and J.A. Goldstone, A neutron powder diffraction study of the ordering in $Li_xNi_{1-x}O$ ☆ 405

M. Wakihara, Hirofumi Hinode and Chiyo Inoue, Decomposition of NO using Chevrel-phase sulfides ☆ 413

T. Kawada, N. Sakai, H. Yokokawa and M. Dokiya, Electrical properties of transition-metal-doped YSZ 418

A. Schirmer, P. Heitjans, W. Faber and D. Clausen, Diffusion-induced spin–lattice relaxation of ^{8}Li in β-LiAl 426

H. Arashi and H. Naito, Oxygen permeability in ZrO_2–TiO_2–Y_2O_3 system 431

H. Naito and H. Arashi, Electrical properties of ZrO_2–TiO_2–Y_2O_3 system 436

S. Kambe, M. Kawai, Y. Murakoshi and R. Sekine, Changes in the Bi and Cu valences and the Cu K-edge XANES for Bi 2201 and 2212 phases by annealing in absence of oxygen 442

T. Norby, O. Dyrlie and P. Kofstad, Protons in Ca-doped La_2O_3, Nd_2O_3 and $LaNdO_3$ 446

A. Datta, R. Kikuchi and H. Sato, Percolation threshold for electronic conduction in β-alumina type compounds: II 453

H.J.M. Bouwmeester, H. Kruidhof, A.J. Burggraaf and P.J. Gellings, Oxygen semipermeability of erbia-stabilized bismuth oxide 460

OPTO-IONICS AND ELECTROCHROMICS

M. Mastragostino, C. Arbizzani, P. Ferloni and A. Marinangeli, Polymer-based electrochromic devices ☆ 471

C.G. Granqvist, Electrochromism and smart window design ☆ 479

Y. Shimizu, K. Nagase, N. Miura and N. Yamazoe, Electrochromic properties of spin-coated V_2O_5 thin films 490

J.D. Barrie and B. Dunn, Optical spectroscopy of Cu^+-doped β-aluminas 496

K. Hinokuma, K. Ogasawara, A. Kishimoto, S. Takano and T. Kudo, Electrochromism of spin-coated $MoO_3 \cdot nH_2O$ thin films from peroxo-polymolybdate 507

G.R. Thomas and J.R. Owen, Rare earth oxides in electrochromic windows 513

S. Passerini and B. Scrosati, Electrochromism of thin-film nickel oxide electrodes 520

ION EXCHANGE REACTIONS

S. Yamanaka, T. Sako, K. Seki and M. Hattori, Anion exchange reactions in layered basic copper salts 527

M. Ohashi, M. Sarubo, S. Yamanaka and M. Hattori, Preparation and ionic conductivity of alkali metal titanium silicophosphates $A_xTi_3P_6Si_2O_{25}$ (A=Li, Na, K) 534

Y. Hu, P.K. Davies and T.P. Feist, Formation and ion-exchange chemistry of new oxides with the hexagonal MoO_3 structure 539

P.K. Davies and C.M. Kagan, Ion exchange reactions of potassium brannerite, $K_{0.8}(V_{0.8}Mo_{1.2})O_6$ 546

G. Dorner, H. Durakpasa, G. Fafilek and M.W. Breiter, Production and characterization of polycrystalline (Na, Ca)β″-alumina 553

G.W. Schäfer and W. Weppner, Preparation of divalent beta-alumina ceramics via ion exchange from K- and Na-β″-alumina ceramics 559

C.K. Kuo, N.D. Patel, A. Tan, P. Sarkar and P.S. Nicholson, The kinetics of ultrasonic/electrical-field assisted hydronium ion exchange of K^+-β″-Al_2O_3 564

MIXED OXIDE PEROVSKITES

J.T. Vaughey, E.F. Hasty and K.R. Poeppelmeier, Cation coordination and oxygen vacancies in mixed oxide perovskites ☆ 573

T. Bieger, J. Maier and R. Waser, Optical investigation of oxygen incorporation in $SrTiO_3$ 578

H.-I. Yoo and C.-S. Kim, Electrical properties and defect structure of $Y_{1-x}Ca_xFeO_3$ orthoferrites 583

P. Conflant, M. Drache, M. Lagrenee, J.C. Boivin and J.P. Wignacourt, A new multiple perovskite family $Sr_3(Bi_{1-y}Sb_y)O_{5.5-\delta}(0 \leq y \leq 1)$ 592

S. Carter, A. Selcuk, R.J. Chater, J. Kajda, J.A. Kilner and B.C.H. Steele, Oxygen transport in selected nonstoichiometric perovskite-structure oxides 597

T. Watanabe, T. Yatabe, H. Yugami and M. Ishigame, Control of oxygen concentration in BSCCO thin films using solid-state electrolytes 606

V.E.J. van Dieten, J.P. Dekker and J. Schoonman, Oxygen diffusion in the SOFC interconnection material $LaCr_{(1-x)}Mg_xO_3$ 611

THIN FILM IONICS

R.B. Goldner, F.O. Arntz, G. Berera, T.E. Haas, G. Wei, K.K. Wong and P.C. Yu, A monolithic thin-film electrochromic window ☆ 617

S.D. Jones and J.R. Akridge, A thin film solid state microbattery 628

H. Nakano, S. Yamanaka and M. Hattori, Reactivity of RF magnetron sputtered $CaSi_2$ film 635

R. Creus, J. Sarradin and M. Ribes, Thin films of ionic and mixed conductive glasses: their use in microdevices 641

J.B. Bates, N.J. Dudney, G.R. Gruzalski, R.A. Zuhr, A. Choudhury, C.F. Luck and J.D. Robertson, Electrical properties of amorphous lithium electrolyte thin films 647

N.J. Dudney, J.B. Bates, R.A. Zuhr and C.F. Luck and J.D. Robertson, Sputtering of lithium compounds for preparation of electrolyte thin films 655

BATTERIES

B.B. Owens and P.M. Skarstad, Ambient temperature solid state batteries ☆ 665

S. Yde-Andersen, R. Koksbang and J.S. Lundsgaard, Rechargeability and rate capability of polymer electrolyte batteries at different temperatures ☆ 673

J.-D. Cao, W.-Y. Xu, Y. Zhou and Y.-F. Le, Sodium–sulfur cell and battery test 678

R.J. Gummow and M.M. Thackeray, Lithium–cobalt–nickel-oxide cathode materials prepared at 400°C for rechargeable lithium batteries 681

N. Kuriyama, T. Sakai, H. Miyamura and H. Ishikawa, Solid-state metal hydride batteries using tetramethylammonium hydroxide pentahydrate 688

W.J. Macklin and R.J. Neat, Performance of titanium dioxide-based cathodes in a lithium polymer electrolyte cell 694

J.P. Pereira-Ramos, R. Baddour, S. Bach and N. Baffier, Electrochemical and structural characteristics of some lithium intercalation materials synthesized via a sol–gel process: V_2O_5 and manganese dioxides-based compounds 701

PART II

CERAMIC ELECTROLYTES

R.N. Vannier, G. Mairesse, G. Nowogrocki, F. Abraham and J.C. Boivin, Electrical and structural investigations on a new bismuth lead vanadium oxide solid electrolyte 713

K. Ado, Y. Saito, T. Asai, H. Kageyama and O. Nakamura, Li^+-ion conductivity of $Li_{1+x}M_xTi_{2-x}(PO_4)_3$ (M: Sc^{3+}, Y^{3+}) 723

Y. Saito, K. Ado, T. Asai, H. Kageyama, O. Nakamura and Y. Yamamoto, Enhancement of ionic conductivity of $Na_4Zr_2Si_3O_{12}$ by the dispersion of SbF_5-adsorbed solid superacid particles 728

Y.M. Yan, Multicomponent equilibria in gas-participating β″- and β-alumina systems 733

I. Bloom, M.C. Hash, J.P. Zebrowski, K.M. Myles and M. Krumpelt, Oxide-ion conductivity of bismuth aluminates 739

Y. Takeda, N. Imanishi, R. Kanno, T. Mizuno, H. Higuchi, O. Yamamoto and M. Takano, Oxide ion conductivity in perovskite type Sr_2ScAlO_5 and related compounds 748

S. Yoshikado, T. Ohachi, I. Taniguchi, M. Watanabe, Y. Onoda and Y. Fujiki, Ion conduction in one-dimensional ionic conductors Mg-, Rb- and Al-doped $K_xGa_8Ga_{8+x}Ti_{16-x}O_{56}$ single crystals 754

K. Yamana, S. Nakamura, T. Yoshimura, K. Ina and W. Weppner, Electrical resistances and deformation of yttria-stabilized cubic zirconia with alumina 763

S.P.S. Badwal and J. Drennan, Microstructure/conductivity relationship in the scandia–zirconia system 769

F.W. Poulsen and N. van der Puil, Phase relations and conductivity of Sr- and La-zirconates 777

M. Watanabe, Y. Fujiki, K. Kosuda, S. Yoshikado and T. Ohachi, Annealing effect on the Frenkel-type defect of gallium in fast ion-conductor $K_x[Ga_8Ga_{8+x}Ti_{16-x}O_{56}]$ 784

J. Mizusaki, H. Tagawa, K. Saito, K. Uchida and M. Tezuka, Lithium carbonate as a solid electrolyte 791

J.-M. Bae and S.-J. Park, Surface conduction characteristic of 8 mol% Y_2O_3–ZrO_2 798

R.M. Williams, B. Jeffries-Nakamura, M.L. Underwood, M.A. Ryan, D. O'Connor and S. Kikkert, High temperature conductivity of potassium-β″-alumina 806

TECHNIQUES AND COMPLEX IMPEDANCE

Ph. Colomban, E. Mouchon, N. Belhadj-Tahar and J.C. Badot, Radio and microwave frequency relaxations and conductivity in superionic conductor NASICON * 813

A. Ovenston and J.R. Walls, Complex impedance analysis of heterogeneous catalysts containing mixed or fast ion conductors 825

* Plenary/keynote lecture.

W.K. Lee, B.S. Lim, J.F. Liu and A.S. Nowick, ac conductivity in ionically conducting crystals and glasses 831

I.V. Murin and W. Gunsser, Relaxation methods for the study of ion transport in halide systems ☆ 837

J. ten Eicken, W. Gunsser, S.V. Chernov, A.V. Glumov and I.V. Murin, Electrical and EPR studies of heterovalent solid solutions based on superionic β-PbF_2 843

M. Sonderegger, J. Roos, C. Kugler, M. Mali and D. Brinkmann, NMR imaging of ^7Li in a $PEO_8(LiClO_4)$ film 849

A. Kopp, H. Näfe and W. Weppner, Characterization of the electronic charge carriers in TZP 853

R.J. Chater, S. Carter, J.A. Kilner and B.C.H. Steele, Development of a novel SIMS technique for oxygen self-diffusion and surface exchange coefficient measurements in oxides of high diffusivity 859

P. Cofrancesco, S. Scotti, M. Villa, P. Mustarelli and A. Gottvald, Quantitative interpretation of NMR spectra of disordered solids 868

J. Munk and E. Skou, The use of on-line electrochemical mass spectrometry in the investigation of electrode- and electrolyte materials to be used in solid state fuel cells 875

INTERFACES

U. Lauer and J. Maier, Impedance studies of the interface silver halide/electronically conducting oxide: Detection of an ionic space charge layer 885

B.A. van Hassel, B.A. Boukamp and A.J. Burggraaf, Oxygen transfer properties of ion-implanted yttria-stabilized zirconia 890

MODELLING THEORY

H. Sato, T. Ishikawa and K. Funke, Frequency dependence of ionic conductivity in interacting lattice gas systems 907

M. Seel and R. Pandey, Ab initio electronic structure of superionic conductor Li_3P 924

T. Ishii, Dynamical properties of 1-D hopping conductors: Frenkel–Kontorova model 928

K. Takahashi, I. Mannari and T. Ishii, On the two peaks of the specific heat in 1-D FK model: A computer simulation 933

K.L. Ngai and O. Kanert, Comparisons between the coupling model predictions, Monte Carlo simulations and some recent experimental data of conductivity relaxations in glassy ionics ☆ 936

K. Funke, T. Kloidt, D. Wilmer and C.J. Carlile, Jump relaxation in $RbAg_4I_5$ by dynamic conductivity and quasielastic neutron scattering 947

C.R.A. Catlow, Can the mechanisms of ion transport in SSIs be determined by computer modelling? ☆ 955

PROTON CONDUCTORS

N. Bonanos, Transport properties and conduction mechanism in high-temperature protonic conductors ☆ 967

N. Miura and N. Yamazoe, Development of new chemical sensors based on low-temperature proton conductors ☆ 975

T. Yajima and H. Iwahara, Studies on proton behavior in doped perovskite-type oxides: (II) Dependence of equilibrium hydrogen concentration and mobility on dopant content in Yb-doped $SrCeO_3$ 983

P.R. Slater and C. Greaves, The ionic conductivity of proton containing garnets and their decomposition products 989

A. Kishimoto, T. Kudo and T. Nanba, Amorphous tantalum and niobium oxide proton conductors derived from respective peroxo polyacids 993

N. Taniguchi, K. Hatoh, J. Niikura, T. Gamo and H. Iwahara, Proton conductive properties of gadolinium-doped barium cerates at high temperatures 998

T. Scherban and A.S. Nowick, Protonic conduction in Fe-doped $KTaO_3$ crystals 1004

POLYMER ELECTROLYTES

M. Forsyth, V.A. Payne, M.A. Ratner, S.W. de Leeuw and D.F. Shriver, Molecular dynamics simulations of highly concentrated salt solutions: Structural and transport effects in polymer electrolytes ☆ 1011

M.G. McLin and C.A. Angell, Frequency-dependent conductivity, relaxation times, and the conductivity/viscosity coupling problem, in polymer-electrolyte solutions: $LiClO_4$ and $NaCF_3SO_3$ in PPO 4000 ☆ 1027

L.M. Torell, P. Jacobsson, D. Sidebottom and G. Petersen, The importance of ion–polymer crosslinks in polymer electrolytes 1037

I. Albinsson, P. Jacobsson, B.-E. Mellander and J.R. Stevens, Ion association effects and ionic conduction in polyalkalene modified polydimethylsiloxanes 1044

L. Xie and G.C. Farrington, Molecular mechanics and dynamics simulation of poly(ethylene oxide) electrolytes 1054

M.S. Mendolia and G.C. Farrington, Conductivities and viscosities of polyethylene glycol (PEG) electrolytes containing divalent metal bromides 1059

W. Wieczorek, Entropy effects on conductivity of the blend-based and composite polymer solid electrolytes 1064

J. Przyłuski and W. Wieczorek, Copolymer electrolytes 1071

Å. Wendsjö, J. Lindgren, J.O. Thomas and G.C. Farrington, The effect of temperature and concentration on the local environment in the system $M(CF_3SO_3)_2PEO_n$ for M = Ni, Zn and Pb 1077

D. Teeters, M. Wong and C.L. Straub, Conductivity and glass transition studies of the mixed-alkali effect in poly(propylene oxide)–thiocyanate salt systems 1083

P.G. Bruce, M.T. Hardgrave and C.A. Vincent, The determination of transference numbers in solid polymer electrolytes using the Hittorf method 1087

W. Huang and R. Frech, Raman spectra of PPO–salt complexes: Mixed cations and mixed anions 1095

W. Gang, J. Roos, D. Brinkmann, F. Capuano, F. Croce and B. Scrosati, Comparison of NMR and conductivity in $(PEO)_8LiClO_4+\gamma$-$LiAlO_2$ 1102

C. Wang, Q. Liu, Q. Cao, Q. Meng and L. Yang, Investigation on the structure and the conductivity of plasticized polymer electrolytes 1106

M.D. Glasse, R.J. Latham, R.G. Linford and R.A.J. Pynenburg, Structure–conductivity relationships in divalent polymer electrolytes 1111

S. Nagae, H.M. Nekoomanesh, C. Booth and J.R. Owen, The effect of salt concentration on the properties of poly[oxymethylene-oligo(oxyethylene)]/$LiClO_4$ polymer electrolytes 1118

W. Wernet, H. Yamato, K. Kai, T. Koshiba, M. Ohwa and B. Rotzinger, Improvement of the properties of pyrrole intrinsically conducting polymers (ICP) with polyelectrolytes 1125

GLASSY ELECTROLYTES

D. Knödler, W. Dieterich and J. Petersen, Coulombic traps and ion conduction in glassy electrolytes ☆ 1135

S.W. Martin, H.K. Patel, F. Borsa and D. Torgeson, Multiple frequency spin–lattice relaxation time and conductivity measurements of FIC Li_2S+SiS_2 glasses 1141

H.K. Patel and S.W. Martin, Fast ionic conduction in $Na_2S+B_2S_3$ glasses: Compositional contributions to non-exponentiality in conductivity relaxations 1148

Y. Hiki, H. Takahashi and H. Kobayashi, Anelastic and viscous properties of AgI–$AgPO_3$ glass 1157

H. Takahashi, Y. Hiki, T. Sakuma and S. Funahashi, Inelastic neutron scattering of $(AgI)_x(AgPO_3)_{1-x}$ glasses 1164

R. Gopalakrishnan, B.V.R. Chowdari and K.L. Tan, Electrical and structural characterization of the xCuO: $(1-x)V_2O_5$ 1168

B.V.R. Chowdari, K.L. Tan and W.T. Chia, Raman and X-ray photoelectron spectroscopic studies of lithium phosphotungstate glasses 1172

K. Hariharan, C. Sangamithra and A.M. Sukeshini, New solid electrolyte system: Polycrystalline CuI–Ag_2O–MoO_3 1179

S. Kondo, K. Takada and Y. Yamamura, New lithium ion conductors based on Li_2S–SiS_2 system 1183

A. Pradel, V. Michel-Lledos, M. Ribes and H. Eckert, Structural and electrical characterization of glasses in the system Li_2Se–$SiSe_2$ by ^{29}Si MAS NMR and Raman spectroscopy 1187

R. Chen, R. Yang, B. Durand, A. Pradel and M. Ribes, A study of the mixed alkali effect by frequency-dependent conductivity in Li_2O–Na_2O–P_2O_5 glasses 1194

A. Pierre, F. Duboudin, B. Tanguy and J. Portier, Liquid medium processing of TeO_2 for ionic conductors 1200

M. Ménétrier, C. Estournès, A. Levasseur and K.J. Rao, Ionic conduction in B_2S_3–Li_2S–LiI glasses 1208

B. Wang, S. Szu, M. Greenblatt and L.C. Klein, Structure and ionic conductivity in $(LiCl)_2$–Ga_2O_3–SiO_2 xerogels 1214

Y. Oyama and J. Kawamura, Ionic conductivity of AgI-based superionic glasses under hydrostatic pressure 1221

J. Kawamura and S. Hiyama, New superionic glasses based on silver iodide with organic monomer ions 1227

M. Cutroni, A. Magistris and M. Villa, Dynamics and structure of $(Ag_2S)_x(AgPO_3)_{1-x}$ glasses studied by ultrasounds and ^{31}P NMR 1232

S. Scotti, M. Villa, P. Mustarelli and M. Cutroni, Structure, conductivity and acoustic attenuation in $(Ag_2SO_4)_x(AgPO_3)_{1-x}$ 1237

V. Berbenni, A. Marini, S. Scotti and M. Villa, Decomposition and phase separation of AgI-doped silver borate glasses 1245

STRUCTURE PROPERTIES

F. Rocca, G. Dalba, P. Fornasini and A. Tomasi, Structural study of $AgI–Ag_2O–B_2O_3$ glasses by X-ray absorption spectroscopy ☆ 1253

T. Atake, H. Kawaji, R. Kanno, K. Ohno and O. Yamamoto, Heat capacity anomaly in the high ionic conductor $Rb_4Cu_{16}I_7Cl_{13}$ 1260

H. Yugami, S. Matsuo and M. Ishigame, Raman scattering study on fractal structures in YSZ ☆ 1264

T. Awano, T. Nanba and M. Ikezawa, Millimeter wave spectroscopy and color centers of MAg_4I_5 (M=Rb, K and NH_4) family 1269

G. Dharmasena and R. Frech, Phase stabilization of sodium sulfate by aliovalent cation substitution 1274

T. Sakuma, K. Shibata and S. Hoshino, Low-energy excitation in CuI 1278

D.E.W. Vaughan, K.G. Strohmaier, I.J. Pickering and G.N. George, Transition metal framework substitutions in sodalites 1282

S.M. Haile, B.J. Wuensch, T. Siegrist and R.A. Laudise, Conductivity and crystallography of new alkali rare-earth silicates synthesized as possible fast-ion conductors 1292

R.A. Vargas and H. Angulo, Phase transition and proton disordering in some ferroelectric hydrogen-bonded lead salts 1302

S.J. Backs and T.H. Etsell, Electrical properties of transition metal aluminate spinels 1305

J.O. Thomas, What can diffraction tell us about mobile ions? 1311